



U.S. Department
of Transportation
Federal Highway

Administration

400 Seventh St., S.W.
Washington, D.C.
20590

Refer to: HSA-10\WZ-97

MS. THERESA STEFFLER
Highway Safety Products
Radiator Specialty Company
P.O. Box 34689
Charlotte, NC 28234-4689

Dear Ms. Steffler:

Thank you for your letter of August 17 requesting Federal Highway Administration (FHWA) acceptance of a number portable sign stands for roll-up signs. Your company wishes to market these stands as crashworthy traffic control devices for use in work zones on the National Highway System (NHS) under your own company name. You referenced FHWA Acceptance Letters from the manufacturer of the stands that document the crashworthiness of the devices. You requested that we find those devices acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

Your request was for a letter that specified the Radiator Specialty Products part numbers only. Because the tests were conducted for Dickie Tool Company, and all of the documentation we have on file references the crash tested devices to Dickie Tool part numbers, we are not able to comply with your request without specific reference to the Dickie Tool devices and crash tests. Therefore we have included these references so that potential users may review these letters and drawings to ensure that the stands will meet their needs.

Introduction

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The first, dated July 25, 1997, titled "INFORMATION: Identifying Acceptable Highway Safety Features," established four categories of work zone devices: Category I devices were those lightweight devices which could be self-certified by the vendor, Category II devices were other lightweight devices which needed individual crash testing, Category III devices were barriers and other fixed or massive devices also needing crash testing, and Category IV devices were trailer mounted lighted signs, arrow panels, etc. The second guidance memorandum was issued on August 28, 1998, and is titled "INFORMATION: Crash Tested Work Zone Traffic Control Devices." This latest memorandum lists devices that are acceptable under Categories I, II, and III.

Following is a description of the devices with Radiator Specialty Products part numbers, and reference to the FHWA Acceptance Letter they are listed in:

1. Radiator Part No. JS4000

Accepted as DF4000 Stand in FHWA Acceptance letter WZ-50 dated October 19, 2000.

A heavy duty, double torsion spring mounted sign support with a 1220 x 1220 mm sign mounted at a height of 305 mm from the ground and with three wood-staffed flags mounted at a height of 2305 mm. This stand supported a RUNR48 non-reflective vinyl roll-up sign. Tested head-on and at 90 degrees.

2. Radiator Part No. JST50

Accepted as T50 Tripod Stand in FHWA Acceptance Letter WZ-50 dated October 19, 2000.

Short Top Stand. A tripod with the tops of the legs shortened, mounted portable sign support with a 1220 x 1220 mm sign mounted at a height of 330 mm and without flags. This stand supported a RUNR48 non-reflective vinyl roll-up sign.

3. Radiator Part No. JS4700

Accepted as DF-4700TX stand in FHWA Acceptance Letter 25 dated May 24, 2000.

A heavy-duty torsion spring mounted sign support with a 1218 mm square vinyl sign mounted at 2134 mm above the pavement with three wood-staffed flags mounted at 3835 mm. The two-part aluminum mast extends to the top of the sign.

4. Radiator Part No. JL1000

Accepted as DL1003W, QLV-W, or MSRIGID-30 stand in FHWA Acceptance Letter 17 dated July 20, 1999

A rigid mounted portable sign support with a 1219 mm square vinyl sign mounted at a height of 356 mm and three wood-staffed flags mounted at 2076 mm.

5. Radiator Part No. JS3000

Accepted as DF3000WQ stand in FHWA Acceptance Letter 17 dated July 20, 1999.

A double-torsion, spring mounted sign support with a 1216 mm x 1219 mm vinyl sign mounted at 368 mm and with two fiberglass-staffed flags at 2083 mm.

Details of the sign stands are in the attachments to the various letters referenced above. These may be found on the FHWA web site at:

<http://safety.fhwa.dot.gov/fourthlevel/hardware/listing.cfm?code=workzone>

Testing and Findings

Full-scale automobile testing was conducted on these portable sign stands and was documented in the above-mentioned acceptance letters. During the tests the most extensive damage was cracking of the windshield. However, there was no occupant compartment intrusion or deformation observed, nor did any test article debris show potential for penetrating the occupant compartment. The results of this testing met the FHWA requirements and, therefore, the devices listed above and detailed in the referenced Acceptance Letters are acceptable for use on the NHS under the range of conditions tested as NCHRP Report 350 Test Level 3 devices (except as noted), when proposed by a State.

Please note the following standard provisions which apply to FHWA letters of acceptance:

- Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was crash tested, it reserves the right to modify or revoke its acceptance.
- You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- You will be expected to certify to potential users that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that they will meet the crashworthiness requirements of FHWA and NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-97, shall not be reproduced except in full.
- Some features of the accepted sign stands may be patented and considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are specified for use on Federal-aid projects, except exempt, non-NHS projects, they: (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists or; (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed.

Sincerely yours,

Frederick G. Wright, Jr.
Program Manager, Safety

Enclosure

FHWA:HSA-10:NArtimovich:tm:x61331:10/30/01

File: hspFinalWZ97.wpd

cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;
N. Artimovich, HSA-10)

Sec. 635.411 Material or product selection.

(a) Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

(1) Such patented or proprietary item is purchased or obtained through competitive bidding with equally suitable unpatented items; or

(2) The State highway agency certifies either that such patented or proprietary item is essential for synchronization with existing highway facilities, or that no equally suitable alternate exists; or

(3) Such patented or proprietary item is used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes.

(b) When there is available for purchase more than one nonpatented, nonproprietary material, semifinished or finished article or product that will fulfill the requirements for an item of work of a project and these available materials or products are judged to be of satisfactory quality and equally acceptable on the basis of engineering analysis and the anticipated prices for the related item(s) of work are estimated to be approximately the same, the PS&E for the project shall either contain or include by reference the specifications for each such material or product that is considered acceptable for incorporation in the work. If the State highway agency wishes to substitute some other acceptable material or product for the material or product designated by the successful bidder or bid as the lowest alternate, and such substitution results in an increase in costs, there will not be Federal-aid participation in any increase in costs.

(c) A State highway agency may require a specific material or product when there are other acceptable materials and products, when such specific choice is approved by the Division Administrator as being in the public interest. When the Division Administrator's approval is not obtained, the item will be nonparticipating unless bidding procedures are used that establish the unit price of each acceptable alternative. In this case Federal-aid participation will be based on the lowest price so established.

(d) Appendix A sets forth the FHWA requirements regarding (1) the specification of alternative types of culvert pipes, and (2) the number and types of such alternatives which must be set forth in the specifications for various types of drainage installations.

(e) Reference in specifications and on plans to single trade name materials will not be approved on Federal-aid contracts.

ENCLOSURE 2